Massachusetts Department of Energy Resources
100 Cambridge St. Suite 1020
Boston, MA 02114
www.mass.gov/doer

State Heating Oil & Propane Program
Final Report
Winter 2008/2009

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Deval L. Patrick
Governor

Ian A. Bowles
Secretary, EOEEA

Timothy P. Murray
Lt. Governor

Philip Giudice
Commissioner

INTRODUCTION

The 2008/09 Winter Heating Season marks the16th year of the Massachusetts Department of Energy Resources' (DOER) participation in the U.S. Department of Energy's annual *State Heating Oil and Propane Program* (SHOPP). SHOPP requires states to collect and monitor retail heating oil and propane prices from October through March. SHOPP augments existing DOER data collection efforts and serves several important purposes. The information provides policy-makers with timely, accurate and consistent data to monitor current heating oil and propane markets and develop, when necessary, appropriate state responses to potential fuel problems. The information also helps the federal and state governments respond to consumer, congressional and media inquiries regarding heating oil and propane.

The SHOPP report summarizes the results from the Massachusetts retail heating oil and propane price surveys, including supply and demand events that affected those markets. Also included are a seasonal overview and a summary of how the SHOPP program is used to augment DOER functions.

Findings

Record Prices Begin to Fall Prior to Heating Season

Following the 2007/2008 winter heating season, prices for both heating oil and propane rose significantly throughout the spring and summer months. Heating oil rose to $4.71/gallon in July 2008, the highest average price ever recorded by the survey. Propane peaked in September 2008 at $3.15. Fortunately for consumers, heating oil prices began to fall in August with propane falling at the end of September, though both opened the heating season at record highs for October.

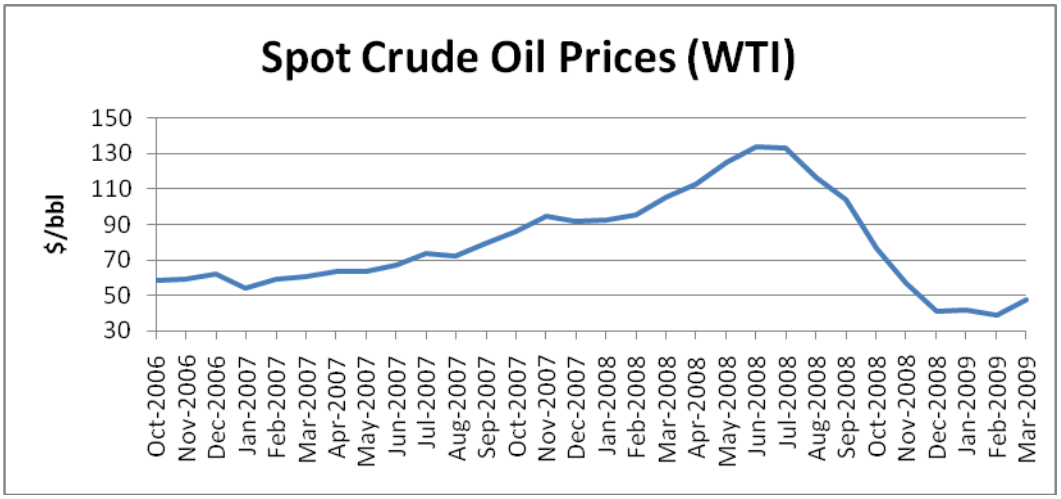
Heating oil opened the season at $3.58/gallon, 32% above the 2007 opening price of $2.72. Propane opened the heating season at $3.09/gallon, 25% more than 2007's $2.47/gallon.

The main reason for the fluctuation in fuel prices was the fluctuation in crude oil prices. Crude oil prices rose to a record $145/barrel during the summer of 2008, pushing fuel prices to records. As crude prices came back to earth,

heating prices followed. The next section highlights what crude prices did during the heating season.

Crude Prices Fall From Record Highs

At the beginning of the 2008-09 heating season, crude oil prices (as measured by WTI spot prices) were about $100/barrel. This level was $45 less than the price heights seen in July 2008. Throughout the first half of the winter, crude oil prices fell to reach the $30/bbl, the lowest price in several years. The second half of the winter, crude prices climbed very slowly back up to the mid-$40/bbl, ending in March at about $50/bbl. The figure below shows a comparison of monthly crude oil prices from October 2007 to March 2009.



October

During this month, crude oil fell from about $100/bbl down to $68/bbl – a decrease of $32. After the hurricanes in September, crude oil outages were 742,000 barrels per day of the original crude oil outage of 1.3 million barrels per day. Moreover, a relatively small amount of refinery capacity was still completely shut down due to some continued electrical outages at refineries, but most refineries were back to normal operations. Crude oil prices were affected mainly by a decreasing demand for petroleum products due to the increasing concerns about a major economic downturn here in the United States and abroad. On October 24th, OPEC announced a 1.5 million bbl/d output cut to try and stem the decrease in oil prices. The key question was whether or not OPEC countries would comply with the cuts.

November

In November, crude prices slipped again and hovered around $55/bbl, but did reach lows of $49 bbl. U.S. consumption of oil fell by about 1 million barrels per day in 2008 relative to 2007. Pessimistic forecasts of economic activity and the credit crunch fed expectations that global oil consumption would continue to fall. The U.S., Europe and China were experiencing dramatic downturns in their

economies. Governments around the world started responding to the economic slowdowns with interest rate cuts, stimulus packages and direct intervention in the financial system. But, these measures would take time to implement; reducing access to capital funding and the lower oil prices were starting to cause companies to cut back in oil infrastructure developments and exploration.

December

It was this month right before Christmas when crude prices hit a bottom of about $30/bbl, despite another cut in production quotas by OPEC. (OPEC had cut 4.2 mb/d in total so far.) There was no confidence in the market about adherence to OPEC cuts and also the U.S. dollar's value continued to fall. During this month, the U.S. Commerce Department reported that the U.S. economy had contracted in the third quarter. This suggested that a further drop in oil consumption was expected. By the end of the month, crude prices had climbed slightly to hover around $38-40/bbl.

January

Crude oil prices were fairly steady bouncing between $35-40/bbl this month. News about fighting in Gaza, the Russian-Ukraine gas dispute resulting in Russia cutting off gas to Europe, and the OPEC production cuts still did not seem to cause oil prices to increase dramatically. According to reports, total oil product consumption in the US was now down 4.7 percent as compared to the same 4 week period last year. Much of this decline was due to a nearly 14 percent decline in the consumption of jet fuel, a 9.9 percent drop in the consumption of residual fuel oil and a 7.2 percent drop in propane/propylene. Consumption of gasoline, which makes up nearly half the US demand for petroleum products, is down by only 1.6 percent and diesel/heating oil is down by 2.6 percent. However, at the end of January, the *NY Times* ran a story about the unusual discipline that OPEC has been showing in cutting production. The *Times* estimated that so far OPEC has made about 75 percent of the pledged cuts with more to come. Also, The American Recovery and Reinvestment Plan was making its way through the Congress. It contained measures for a multi-billion dollar overhaul of energy, and President Obama was outlining his goals for revamping the supply and use of energy.

February

Despite all the steps being formulated and taken to shore up crude oil prices and instill confidence in the commodities and oil markets, crude oil prices in February remained about $40/bbl. Crude oil stocks were increasing with stockpiles the highest in many years. The three major forecasting agencies, the IEA, the EIA and the OPEC Secretariat, released new and lower estimates for 2009 oil consumption as the global economy continued to contract. Although OPEC insisted that about 80% of the cuts were implemented, other OPEC officials (Algeria, Venezuela, and Iran) continued to call for another production cut at the March 15th OPEC meeting.

March

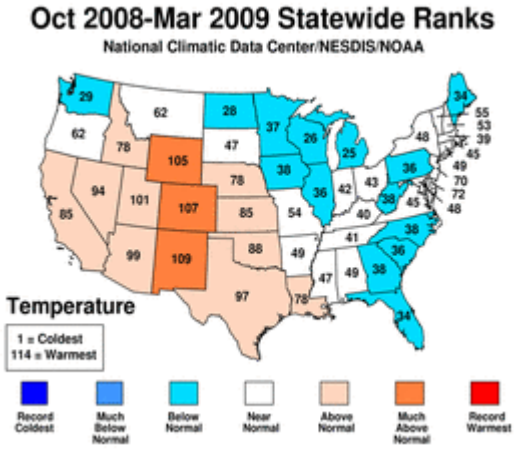
Crude prices increased slowly throughout March to reach a level of about $50/bbl by the end of that month. OPEC decided to hold production steady for the time being, the US government announced a plan to fight the recession by having the Federal Reserve purchase US government debt, and reports continued to circulate that OPEC production continued to decline in March. However, crude stocks continued to climb and there were reports that crude oil in floating storage was about 80 million barrels. There was some uncertainty about whether or not even with OPEC cutbacks if the oversupply in crude inventory would take a while to be worked off given that petroleum demand was very low.

Winter Weather Close to Normal

Traditionally, weather is one of key components impacting heating fuel demand. Warmer weather usually translates to lower demand and prices while colder weather translates to higher demand and prices. The previous winter was about 1% warmer than normal. Early season forecasts from the National Oceanic and Atmospheric Association (NOAA), predicted Massachusetts and the rest of New England had an equal chance for normal, above normal, and below normal temperatures.

Overall, temperatures for the 2008/09 winter were 2% below or near normal for Massachusetts. Figure 1 highlights the temperatures across the United State as ranked by NOAA.

Figure 1



Heating Degree Days (Boston, MA)

The heating season began with October experiencing normal temperatures. November and December were colder than normal compared to the 30-year normal for each of those months and had more snow than normal. For January,

heating degree days were 5.13% colder than normal for that month. February and March were slightly below normal for those respective months.

The heating season, as measured in heating degree days from July 1 – March, was slightly below normal.

Inventories Start Season Lower than Previous Winter

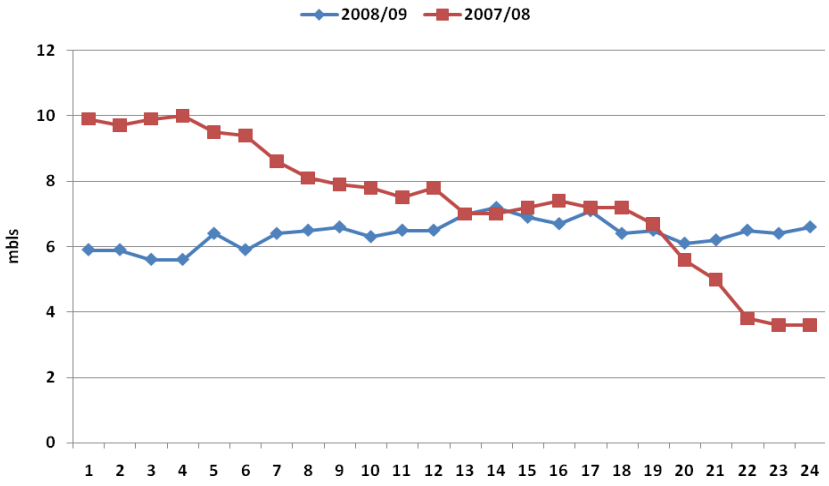
Inventories are another key component in winter fuel prices. Low inventories can lead to shortages which lead to price spikes. Conversely, high inventories can help dampen prices by providing excess product. This heating season, heating oil inventories were lower than the previous year, while propane inventories were low all winter due to supply distributions in New England.

Heating Oil

Heating oil stocks started the heating season 40% below last year's level but ended the heating season at 83% above last year. Over the last few winter seasons, the stocks have generally been lower than in the past. A minor portion of the lower inventory levels as compared to other years is attributed to changes in EIA reporting of heating oil and some diesel fuel due to changes in EPA regulations lowering the allowed sulfur content of diesel fuel to 500 ppm or less for off-road diesel vehicles and equipment and marine and locomotive engines. In the past, heating oil and diesel for those applications had similar sulfur contents leading to some interchangeable use.

Overall, heating oil stocks were steady this winter, fluctuating from a low of 5.9 to a high of 7.1. Figure 2 shows the comparison to last winter.

Figure 2: New England Heating Oil Stocks



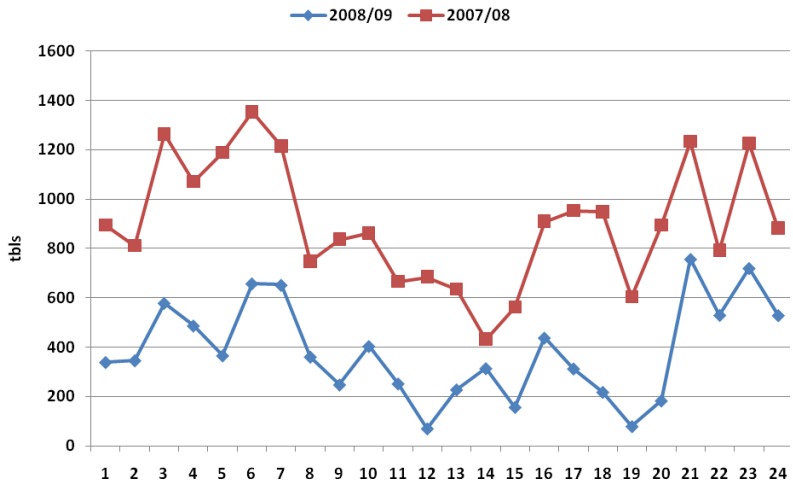
The relatively low volatility in stocks helped keep prices lower than last year. Even with slightly colder than normal weather for most of New England, the stability of inventory prevented price hikes. Lower crude prices also assisted in keeping inventories stable as demand for other crude products fell and heating oil was one product still in demand.

Propane

Unlike heating oil stocks, New England's propane stocks did not enjoy much stability. An early ice storm throughout Massachusetts and Northern New England disrupted supply routes. This was followed by storms near Algeria where most of the waterborne cargo comes from. In addition, there was an accident at sea with 2 tankers that caused further delays in shipments. Since propane supplies in New England are just-in-time inventories, all these delays adversely affected supply from December 2008-February 2009. MA was one of several New England states to issue driver waivers throughout this period and participated in numerous calls about the situation with the propane industry and US Government stakeholders including Federal Emergency Management Agency (FEMA), Office of Energy Assurance (OEA), and Department of Transportation's (DOT) Motor Carrier Regional Office.

Figure 3 compares this year's stocks to last year's.

Figure 3: New England Propane Stocks



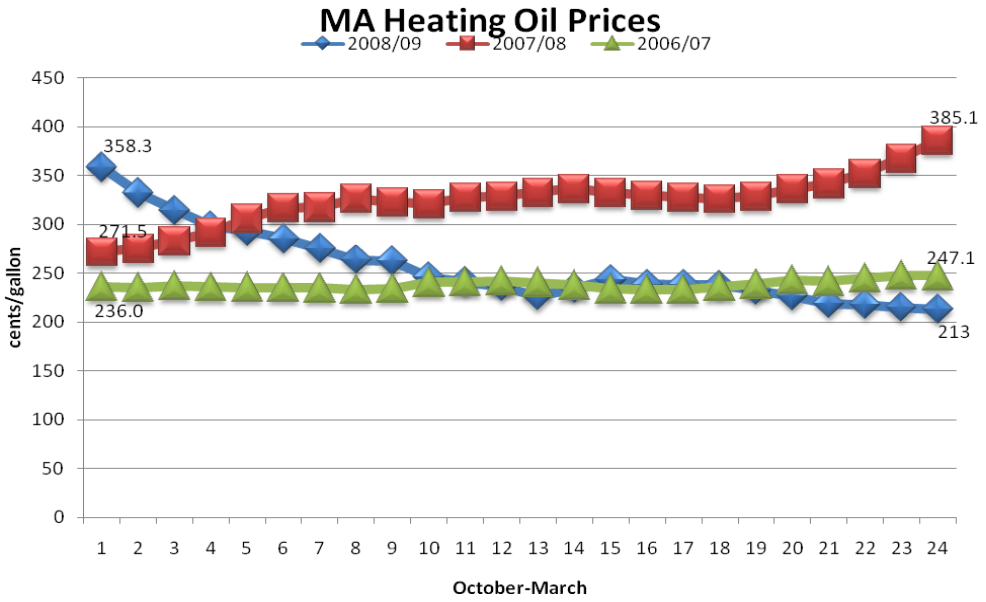
As Figure 3 illustrates, stocks were at times significantly below last year's levels. At one point in mid-February, there was only 79 thousand barrels of propane in New England due to the aforementioned problems. Despite these supply problems, MA did not see any significant price increases that usually occur when supplies are tight. Some of that may be due to the propane trade association, Propane Gas Association of New England (PGANE) working with dealers to make sure that product was shared and no one went totally dry. In conjunction with state actions, the PGANE measures helped avoid any public knowledge of a shortage that might have lead to a run on dealers.

Moderating Prices Provide Some Relief to Consumers

After being hit by record shattering prices the previous winter, consumers got some relief this heating season. Both heating oil and propane prices started the heating season at record highs for October but fell throughout the winter.

Heating Oil

Following last season's record average price of $3.24/gallon, MA consumers were bracing for another long winter with high prices. Even with prices falling back from the summer high of $4.71, heating oil started the season at $3.58 or 32% higher than the previous winter. Fortunately for MA heating oil customers falling crude prices due to the global economic slowdown coupled with stable inventories pushed heating oil prices back to the 2006/07 winter level. Near normal winter weather was another positive factor in moderating prices. Figure 4 illustrates the prices for the past three heating seasons.



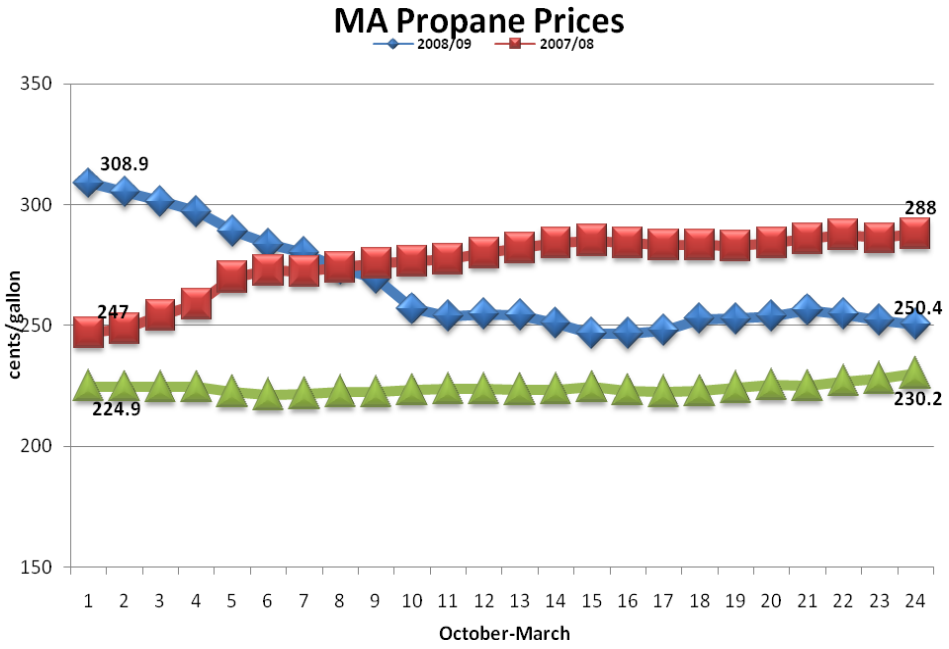
As Figure 4 shows, prices actually ended the season below the 2006/07 level with the average price for the season at $2.56/gallon or 21% below the previous winter average of $3.24/gallon.

Propane

Massachusetts propane prices also fell from the record highs of the previous winter. Propane prices started this season at a record high $3.09/gallon, 25% higher than last year ($2.47).

Similar to heating oil, propane price moderated throughout the winter though not at the same double digit levels as heating oil. Some of the slower rate of decrease can be attributed to the aforementioned supply issues that

occurred over the winter. However, unlike with previous supply concerns, prices did not spike. Figure 5: shows the prices for the past three heating seasons including this one



Propane's season average of $2.66/gallon, 3% below last year's $2.76/gallon. Overall, though the drop off in propane was not as large as that of heating oil, given the supply constraints it was better than expected.

Price Summary

Following last winter's record high prices and the continued rise of prices over the spring and summer of 2008, DOER was concerned about what prices would be this heating season. Obviously the global economic downturn and falling energy prices helped to lower prices closer to levels of 2 years ago. Heating oil in particular showed a significant drop to end the season even below 2007 season ending levels. Propane saw less of a drop off but did end up slightly below last winter.

SHOPP Data Used to Support DOER Activities

One of DOER's most important functions is to provide accurate and timely information on energy prices and supplies to the government, media and consumers of the Commonwealth. SHOPP is a valuable asset to the data collection and price monitoring activities involved in this function. It enables DOER to provide information to policy makers who must act quickly in the event of an emergency.

DOER collects and posts pricing information from the SHOPP surveys for heating oil and propane on our website, www.mass.gov/doer. This information is

updated weekly during the winter and monthly during the off-season. Numerous groups and consumers use these surveys to measure their prices against the state average price collected under SHOPP.

DOER also uses the SHOPP information during the New England States' and Energy Industry Conference Calls. From October through March, DOER staff participates in weekly calls regarding the winter fuels situation. The calls are hosted by the New England Governors' Conference (NEGC) and participants include energy offices in New England and New York; energy industry representatives including the Northeast Gas Association, ISO-New England; the U.S. Coast Guard, Massachusetts Petroleum Council and the U.S. DOE. Participants exchange data about heating fuels and electricity winter supplies and prices.

This winter, those calls took on an added urgency due to the supply issues with propane. The propane industry and state emergency management agencies as well as FEMA joined the call to give updates and get updates from the states. In MA, we used the SHOPP survey to contact our listed dealers and get information from them on their situations with supplies. Dealers were able to tell us if they had supplies, needed supplies or were going out of the region to get supplies. This information helped us to advise the Massachusetts Emergency Management Agency (MEMA) on whether it should issue driver hour waivers for truck drivers of propane fuels. MEMA did end up issuing several waivers throughout the winter, starting in December, to assist with bringing in extra supplies.

Other meetings attended by DOER that utilize SHOPP data include the Massachusetts Department of Housing and Community Development's (DHCD) Energy Advisory Meetings. As part of its duties under its management of the Commonwealth's Weatherization Assistance Program (WAP), DHCD holds quarterly meetings on its weatherization and Low-Income Home Energy Assistance Program (LIHEAP), also known as fuel assistance. As a member of this group, DOER provides information on prices and supplies. DHCD briefs group members on the status of these federal programs including funds, allocations, and number of recipients.

The SHOPP program is a critical component in DOER's mission to provide accurate energy price information to the Commonwealth and its citizens. Massachusetts residents traditionally endure long and cold winters and knowing what prices are as well as where they are headed is extremely important. For these reasons, DOER looks forward to its continued participation in SHOPP.